



JC19 Rec'd/PCT/PTO 19 JUL 2001

Atty. Dkt. No. 084335/0135

PCT #9  
Da  
11/7/02

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Takashi HORIUCHI et al.

Title: METHOD FOR AMPLIFYING FOREIGN GENES

Appl. No.: 09/807,409

Filing Date: April 13, 2001

Examiner: Unassigned

Art Unit: Unassigned

**RECEIVED**

**JAN 04 2002**

**TECH CENTER 1600/2900**

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Submitted herewith on a modified Form PTO-1449 is a listing of documents known to applicant in order to comply with applicant's duty of disclosure pursuant to 37 CFR 1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR §§1.97-1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a prima facie prior art reference against the claims of the present application.



Atty. Dkt. No. 084335/0135

THE NATURE AND RELEVANCE OF THE DISCLOSURE

The instant Information Disclosure Statement is being filed in compliance with 37 CFR §1.97(b) prior to the mailing date of the first official action.

Concise Explanation of Japanese Reference

Reference 3

Horiuchi, T., Jikken Igaku (Experimental Medicine), 13, 44-52 (1995)

This reference reviews relationship between blocking of replication fork and homologous recombination in *Escherichia coli*. Hot DNA is a homologous recombination hotspot in *E. coli*. Blocking of replication fork at Ter site requires tau (tus) gene.

This reference also mentions that *Saccharomyces cerevisiae* has a similar system; HOT1 is a homologous recombination hotspot in *S. cerevisiae*, blocking site of replication fork locates in HOT1, and fob gene is required both for blocking of replication fork and for hotspot activity of HOT1.

Applicant respectfully requests that the listed documents be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO-1449 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date July 18, 2001

FOLEY & LARDNER  
Washington Harbour  
3000 K Street, N.W., Suite 500  
Washington, D.C. 20007-5109  
Telephone: (202) 672-5300  
Facsimile: (202) 672-5399

By Phillip J. Articola

Reg. No.  
38,819

for / Stephen B. Maebius  
Attorney for Applicant  
Registration No. 35,264

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>			<b>Complete if Known</b>	
Date Filed: July 19, 2001 (use as many sheets as necessary)			<b>Application Number</b>	09/807,409
JUL 19 2001 J. C. 181 TRADEMARK OFFICE			<b>Filing Date</b>	April 13, 2001
			<b>First Named Inventor</b>	Takashi HORIUCHI et al.
			<b>Group Art Unit</b>	Unknown
			<b>Examiner Name</b>	Unknown
Sheet	1	of 3	<b>Attorney Docket Number</b>	084335/0135

[illegible][illegible]

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Unique citation designation number. 2See attached Kinds of U.S. Patent Documents. 3Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

Standard ST.9). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.  
 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, D.C. 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO			Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> Date Filed: July 19, 2001 (use as many sheets as necessary)			Application Number	09/807,409
			Filing Date	April 13, 2001
Sheet 2 of 3			First Named Inventor	Takashi HORIUCHI et al.
			Group Art Unit	Unknown
JUL 19 2001 PATENT & TRADEMARK OFFICE			Examiner Name	Unknown
			Attorney Docket Number	084335/0135

RECEIVED JAN 04 2002 TECH CENTER 600

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A1	TAKEHIKO KOBAYASHI et al.: "A Yeast Gene Product, Fob1 Protein, Required for Both Replication Fork Blocking and Recombinational Hotspot Activities," Genes to Cells, 1996, pgs. 465-474, Blackwell Science Limited	
	A2	TAKASHI HORIUCHI et al.: "The DNA Replication Fork Blocked at the Ter Site May Be an Entrance for the RecBCD Enzyme into Duplex DNA," Journal of Bacteriology, Aug. 1994, pgs. 4656-4663, Vol. 176, No. 15, American Society of Microbiology	
	A3	TAKASHI HORIUCHI: "An Unbreakable Relationship Between Recombination and Replication," Laboratory of Gene Expression and Regulation, National Institute for Basic Biology, 1995, pgs. 44-52, Vol. 13, No. 11	
	A4	THOMAS M. HILL et al.: "Tus, the Trans-Acting Gene Required for Termination of DNA Replication in Escherichia coli, Encodes a DNA-Binding Protein," Proc. Natl. Acad. Sci. USA, March 1989, pgs. 1593-1597, Genetics, Vol. 86	
	A5	TAKEHIKO KOBAYASHI et al.: "Expansion and Contraction of Ribosomal DNA repeats in Saccharomyces Cerevisiae: requirement of replication fork blocking (Fob1) Protein and the Role of RNA Polymerase I," Genes & Development, 1998, pgs. 3821-3820, Cold Spring Harbor Laboratory Press ISSN	
	A6	THOMAS D. PETES: "Yeast Ribosomal DNA Genes Are Located On Chromosome XII," Proc. Natl. Acad. Sci USA, January 1979, pgs. 410-414, Vol. 76, No. 1	
	A7	K.G. SKRYABIN et al.: "Structure and Function of the Nontranscribed Spacer Regions of Yeast rDNA," Nucleic Acids Research, 1984, pgs. 2955-2968, Vol. 12, No. 6, IRL Press Limited, Oxford, England	
	A8	MAARTEN H.K. LINSKENS et al.: "Organization of Replication of Ribosomal DNA in Saccharomyces Cerevisiae," Molecular and Cellular Biology, Nov. 1988, pgs. 4927-4935, Vol. 8, No. 11, American Society for Microbiology	
	A9	RALPH L. KEIL et al.: "Cis-Acting, Recombination-Stimulating Activity in a Fragment of the Ribosomal DNA of S. Cerevisiae," Cell, 1984, pgs. 377-386, Vol. 39, MIT	
	A10	ELAINE A. ELION et al.: "The Major Promoter Element of rRNA Transcription in Yeast Lies 2 kb Upstream," Cell, 1984, pgs. 663-673, Vol. 39, MIT	
	A11	BERNICE E. MORROW et al.: "The rRNA Enhancer Regulates rRNA Transcription in Saccharomyces Cerevisiae," Molecular and Cellular Biology, 1993, pgs. 1283-1289, Vol. 13, No. 2, American Society for Microbiology	
	A12	KAREN VOELKEL-MEIMAN et al.: "Recombination-Stimulating Sequences in Yeast Ribosomal DNA Correspond to Sequences Regulating Transcription by RNA Polymerase I," Cell, March 27, 1987, pgs. 1071-1079, Cell Press	
	A13	GUEWHA STEVEN HUANG et al.: "Requirements for Activity of the Yeast Mitotic Recombination Hotspot HOT1: RNA Polymerase I and Multiple Cis-Acting Sequences," Genetics, November 1995, pgs. 845-855, Genetics Society of America	
	A14	TAKEHIKO KOBAYASHI et al.: "Identification of a Site Required for DNA Replication Fork Blocking Activity in the rRNA Gene Cluster in Saccharomyces Cerevisiae," Mol Gen Genet, 1992, pgs. 355-362, MGG Springer-Verlag	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  Date Filed: July 19, 2001 (use as many sheets as necessary)		Application Number	09/807,409
		Filing Date	April 13, 2001
JUL 19 2001 PATENT & TRADEMARK OFFICE		First Named Inventor	Takashi HORIUCHI et al.
		Group Art Unit	Unknown
Sheet 3 of 3		Examiner Name	Unknown
		Attorney Docket Number	084335/0135

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A15	BONITA J. BREWER et al.: "The Arrest of Replication Forks in the rDNA of Yeast Occurs Independently of Transcription," Cell, October 16, 1992, pgs. 267-278, Vol. 71, Cell Press	
	A16	BONITA J. BREWER et al.: "A Replication Fork Barrier at the 3' End of Yeast Ribosomal RNA Genes," Cell, November 18, 1988, pgs. 637-643, Vol. 55, Cell Press	
	A17	TERESA S. LOPES et al.: "High-Copy-Number Integration into the Ribosomal DNA of Saccharomyces Cerevisiae: A New Vector for High-Level Expression," Gene, 1989, pgs. 199-206, Elsevier Science Publishers B.V. (Biomedical Division)	
	A18	TOSHIO FUJII et al.: "Application of a Ribosomal DNA Integration Vector in the Construction of a Brewer's Yeast Having $\alpha$ -Acetolactate Decarboxylase Activity," Applied and Environmental Microbiology, April, 1990, pgs. 997-1003, Vol. 56, No. 4, American Society for Microbiology	
	A19	TERESA S. LOPES et al.: "Mechanism of High-Copy-Number Integration of pMIRY-Type Vectors into the Ribosomal DNA of Saccharomyces Cerevisiae," Gene, 1991, pgs. 83-90, Elsevier Science Publishers B.V.	
	A20	T.S. LOPES et al.: "Factors Affecting the Mitotic Stability of High-Copy-Number Integration into the Ribosomal DNA of Saccharomyces Cerevisiae," Yeast, 1996, pgs. 467-477, Vol. 12, John Wiley & Sons Ltd.	
	A21	G.M. ROSSOLINI et al.: "Kluyveromyces Lactis rDNA as a Target for Multiple Integration by Homologous Recombination," Gene, 1992, pgs. 75-81, Elsevier Science Publishers B.V.	
	A22	KEIJI KONDO et al.: "A Transformation System for the Yeast Candida Utilis: Use of a Modified Endogenous Ribosomal Protein Gene as a Drug-Resistant Marker and Ribosomal DNA as an Integration Target for Vector DNA," Journal of Bacteriology, Dec. 1995, pgs. 7171-7177, Vol. 177, No. 24, American Society for Microbiology	
	A23	ZHI ZHANG et al.: "Developmental Regulation of DNA Replication: Replication Fork Barriers and Programmed Gene Amplification in Tetrahymena Thermophila," Molecular and Cellular Biology, Oct. 1997, Pgs. 6147-6156, Vol. 17, No. 10, American Society for Microbiology	
	A24	CORD HEMANN et al.: "High-Copy Expression Vector Based on Amplification-Promoting Sequences," DNA and Cell Biology, 1994, pgs. 437-445, Vol. 13, No. 4, Mary Ann Liebert, Inc.	
	A25	TAKEHIKO KOBAYASHI et al.: "Evidence of a Ter Specific Binding Protein Essential for the Termination Reaction of DNA Replication in Escherichia Coli," The EMBO Journal, 1989, pgs. 2435-2441, Vol. 8, No. 8, IRL Press	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.